IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of starting a two-stroke engine comprising:

(A) manually driving a rotational component of the engine to rotate and provide power to a control system;

(B) determining an absolute rotational position of the component within a time as minimal as less than a single revolution of the engine after generating sufficient power to energize the control system[[;]] by detecting rotation of first and second angularly-spaced indexing markers on the component past a detector and identifying the second detected indexing marker;

(C) enabling an engine firing sequence upon determining the absolute rotational position of the component to start the engine upon a single performance of step (A); then

(D) determining a rotational direction of the component based on continued monitoring of the rotation of the component; and then

(E) disabling the engine firing sequence if is determined in step (D) that the component is running in a reverse direction.

2. (Canceled)

3. (Currently Amended) The method as in claim [[2]] 1, wherein the step of determining the rotational direction of the engine comprises detecting rotation of a third indexing marker on the component past the detector and identifying the third indexing marker.

4. (Original) The method as in claim 3, wherein the determining step comprises determining a sequence that the identified indexing markers are detected.

5. (Original) The method as in claim 4, wherein the second indexing marker is located at a first angular spacing α from the first indexing marker and a second angular spacing β from the third indexing marker, wherein α is not equal to β, wherein a plurality of equally-spaced indicator markers are provided on the component, and wherein the

step of determining the sequence that the identified indexing markers are detected comprises counting the number of indicator markers between the first and second indexing markers and the second and third indexing markers.

6. (Currently Amended) The method as in claim [[2]] 1, wherein the markers are magnetic markers, and wherein the detecting step comprises detecting rotation of the magnetic markers past a magnetic pick-up device located adjacent the component.

7. (Original) The method as in claim 1, wherein the enabling step comprises enabling the supply of energizing current to at least one of an electronic fuel injection system of the engine and an electronic ignition system of the engine.

8. (Original) The method as in claim 1, wherein the engine is a battery-less engine which generates electricity to run the engine from rotation thereof, and further comprising beginning to generate electrical power immediately upon manually driving the component to rotate, and wherein the engine rotates at least one revolution after initiation of the manually driving step before generating enough power to run the engine.

9. (Original) The method as in claim 8, wherein the manually driving step drives the engine to rotate through no more than five revolutions.

10. (Original) The method as in claim 9, wherein the manually driving step drives the engine to rotate through no more than three revolutions.

11. (Original) The method as in claim 8, wherein the engine is a snowmobile engine.

12. (Original) The method as in claim 1, wherein the manually driving step comprises manually pulling a rope-start mechanism.

13. (Original) The method as in claim 1, wherein the rotational component is a flywheel of the engine.

14. (Original) The method as in claim 1, wherein the engine is a snowmobile engine.

15. (Previously Presented) A method of starting a two-stroke battery-less engine, comprising:

(A) driving a rotational component of the engine to rotate by manually actuating a rope-start mechanism to provide power to a control system and thereafter:

(B) detecting rotation of the component through first and second rotational positions thereof;

(C) determining, based on the detecting step, an absolute rotational position of the component, the determining step occurring before the component rotates more than 270°; then

(D) enabling an engine firing sequence immediately upon determining the absolute rotational position of the engine, the enabling step comprising enabling the supply of energizing current to at least one of am electronic injection system of the engine and an electronic ignition system of the engine; then

(E) detecting rotation of the component through a third position which is angularly spaced unequally from the first position and from the second position; then

(F) determining, based on the step (E), whether the component is rotating in a forward direction or a reverse direction; and

(G) disabling the engine firing sequence if it is determined in step (F) that the engine is running in the reverse direction.

16. (Original) The method as in claim 15, wherein the detecting steps comprise detecting rotation of first, second, and third indexing markers on the component past a detector located adjacent the component and identifying at least the second and third indexing markers.

17. (Original) The method as in claim 16, wherein the determining step (D) comprises determining a sequence that the identified markers are detected.

18. (Original) The method as in claim 17, wherein the second indexing marker is located at a first angular spacing α from the first indexing marker and a second angular spacing, β from the third indexing marker, wherein α is not equal to β, wherein a plurality

of equally-spaced indicator markers are provided on the component, and wherein the step of determining the sequence that the identified markers are detected comprises counting the number of additional markers between the first and second indexing markers and the second and third indexing markers.

19. (Original) The method as in claim 15, wherein the engine rotates at least one revolution after initiation of the driving step before generating enough power to run the engine.

20. (Original) The method as in claim 19, wherein the driving step drives the engine to rotate through no more than three revolutions.

21. – 39. (Canceled)

40. (Previously Presented) A signal generating apparatus of an engine comprising:

a plurality of indicator markers spaced apart from one another and positioned about a periphery of a rotational component;

a plurality of indexing markers spaced apart from one another and positioned about the periphery of a rotational component;

wherein the plurality of indexing markers is less in number than that of the plurality of indicator markers and where the plurality of indexing markers are unequally spaced apart;

a detection apparatus to detect movement of the indexing and indicator marks and enable an engine to start after detecting rotational position regardless of rotational direction; and

at least three indexing markers wherein a second indexing marker is located at a first angular spacing α from a first indexing marker and a second angular spacing β from a third indexing marker, where α is not equal to β.

41. (Canceled).

42. (Previously Presented) The signal generating apparatus of claim 40 wherein the plurality of indicating markers are equally spaced apart.

43. (Previously Presented) The signal generating apparatus of claim 40 further comprising a rotatable flywheel having the signal generating apparatus mounted thereto.

44. (Previously Presented) The signal generating apparatus of claim 43 further comprising a detector mounted stationary with regard to the rotatable flywheel and arranged to detect a passage of each indicator marker and indexing marker as the rotatable flywheel rotates about the detector.

45. (Previously Presented) The signal generating apparatus of claim 43 further comprising:

a manual, battery-less start mechanism to start an engine and rotate the rotatable flywheel; and

a control system connected to receive signals from the detector and responsive thereto:

determine an absolute rotational position of the rotatable flywheel based on two of the indexing markers during a single pull of the manual, battery-less start mechanism;

enable an engine firing sequence upon the single pull of the manual, battery-less start mechanism;

determine rotational direction of the rotatable flywheel; and

disable the engine firing sequence if it is determined that the rotational direction is in a reverse direction.

46. (Previously Presented) The signal generating apparatus of claim 42 further comprising a memory unit having stored therein a set of numbers indicative of the plurality of equally spaced indicating markers that are located between each unequally spaced indexing marker.

47. (Previously Presented) The signal generating apparatus of claim 46 further comprising a control system capable of differentiating between the unequally spaced indexing markers based on the number of equally spaced indicating markers therebetween.

48. (Previously Presented) A method of manufacturing a two-stroke engine to enable starting in a single manual pull comprising:

providing a manually driven two-stroke engine, which upon manual rotation of the engine, an alternator provides power to a control system of the engine;

arranging a plurality of indicator markers in a spaced apart relation on a rotational component of the engine;

arranging a plurality of indexing markers about the plurality of indicating markers such that a number of indicating markers between each two indexing markers are unequal for determining an absolute rotational position of the rotational component; and

upon determining the absolute rotational position of the component, enabling engine firing regardless of rotational direction, all during a single manual pull of the manually driven two-stroke engine.

49. (Previously Presented) The method of claim 48 wherein the arrangement allows for determining a rotational direction of the rotational component based on continued monitoring of the rotation of the rotational component, and disabling the engine firing sequence if it is determined that the component is running in a reverse direction.

50. (Previously Presented) A method of starting a two-stroke engine comprising:

(A) manually driving a rotational component of the engine to rotate;

(B) determining an absolute rotational position of the component;

C) enabling an engine firing sequence upon determining the absolute rotational position of the component; then

(D) determining a rotational direction of the component based on continued monitoring of the rotation of the component; and then

(E) disabling the engine firing sequence if is determined in step (D) that the component is running in a reverse direction;

wherein the step of determining the absolute rotational position of the component comprises detecting rotation of first and second angularly-spaced indexing markers on the component past a detector and identifying the second detected indexing marker and detecting rotation of a third indexing marker on the component past the detector and identifying the third indexing marker and determining a sequence that the identified indexing markers are detected; and

wherein the second indexing marker is located at a first angular spacing α from the first indexing marker and a second angular spacing β from the third indexing marker, wherein α is not equal to β, wherein a plurality of equally-spaced indicator markers are provided on the component, and wherein the step of determining the sequence that the identified indexing markers are detected comprises counting the number of indicator markers between the first and second indexing markers and the second and third indexing markers.

51. (Previously Presented) A method of starting a two-stroke battery-less engine, comprising:

(A) driving a rotational component of the engine to rotate by manually actuating a rope-start mechanism, the component comprising one of a crankshaft and a flywheel;

(B) detecting rotation of the component through first and second rotational positions thereof;

(C) determining, based on the detecting step, an absolute rotational position of the component, the determining step occurring before the component rotates more than 270°; then

(D) enabling an engine firing sequence immediately upon determining the absolute rotational position of the engine, the enabling step comprising enabling the supply of energizing current to at least one of an electronic injection system of the engine and an electronic ignition system of the engine; then

(E) detecting rotation of the component through a third position which is angularly spaced unequally from the first position and from the second position; then

(F) determining, based on the step (E), whether the component is rotating in a forward direction or a reverse direction;

(G) disabling the engine firing sequence if it is determined in step (F) that the engine is running in the reverse direction;

wherein the detecting steps comprise detecting rotation of first, second, and third indexing markers on the component past a detector located adjacent the component and identifying at least the second and third indexing markers;

wherein the determining step (D) comprises determining a sequence that the identified markers are detected; and

wherein the second indexing marker is located at a first angular spacing α from the first indexing marker and a second angular spacing, β from the third indexing marker, wherein α is not equal to β, wherein a plurality of equally-spaced indicator markers are provided on the component, and wherein the step of determining the sequence that the identified markers are detected comprises counting the number of additional markers between the first and second indexing markers and the second and third indexing markers.

52. (Previously Presented) A two-stroke engine comprising:

(A) a manually-powered starter which, when actuated, drives a rotational component of the engine to rotate;

(B) a monitor which monitors rotation of the rotational component;

(C) an electrically powered device which, when energized, affects at least one aspect of an engine firing operation; and

(D) a computer which is coupled to the monitor and to the powered device and which is operable, in conjunction with the monitor and the powered device,

to:

(1) determine am absolute rotational position of the component,

(2) enable a supply of energizing current to the powered device upon determining the absolute rotational position of the component,

(3) determine, based on continued monitoring of the rotation of the component after the absolute rotational position of the component has been determined, whether the component is rotating in a forward direction or a reverse direction, and

(4) disable the supply of energizing current to the powered device if it is determined that the component is running in the reverse direction;

wherein the component has first, second, and third angularly-spaced indexing markers thereon, wherein the monitor includes a detector which is configured to detect movement of the first, second, and third indexing markers therepast, and wherein the computer is configured to identify the second and third detected indexing marker and wherein the computer is configured to determine a sequence that the identified indexing markers are detected; and

wherein the second indexing marker is located at a first angular spacing α from the first indexing marker and a second angular spacing β from the third indexing marker, wherein α is not equal to β, and wherein the computer is configured to determine the sequence that the identified indexing markers are detected by counting the number of indicator markers between the first and second indexing markers and the second and third indexing markers.

53. (Previously Presented) A two-stroke engine comprising:

(A) means, responsive to a manually-input force, for driving a rotational component of the engine to rotate;

(B) means for determining an absolute rotational position of the component;

(C) means for enabling an engine firing sequence upon determining the absolute rotational position of the component;

(D) means for determining a rotational direction of the component based on continued monitoring of the rotation of the component after the absolute rotational position of the component is determined;

(E) means for disabling the engine firing sequence if the means for determining the rotational direction of the component determines that that the component is running in a reverse direction;

wherein the means (B) comprises means for detecting rotation of first and second indexing markers on the component past a designated position and determining an angular spacing between the first and second markers;

wherein the means (D) includes means for detecting rotation of a third indexing marker on the component past the designated position and determining a sequence that the identified indexing markers are detected; and

wherein the second indexing marker is located at a first angular spacing α from the first indexing marker and a second angular spacing β from the third indexing marker, wherein α is not equal to β, wherein a plurality of equally-spaced indicator markers are provided on the component, and wherein the means (D) comprises means for counting the number of indicator markers between the first and second indexing markers and the second and third indexing markers.

54. (New) A snowmobile comprising:

a frame;

a steering handlebar disposed on the frame;

at least one ski disposed on the frame and operatively connected to the steering handlebar;

a drive track rotatably disposed on the frame to propel the snowmobile;

a two-stroke engine operatively connected to the drive track to supply motive power thereto;

a rope-start mechanism operatively connected to the engine for starting the engine;

a rotational component driven by the rope-start mechanism;

the rotational component having first and second angularly-spaced indexing markers;

a detector for detecting the angularly spaced maker; and

a control system powered by the rotation of the rotational component and constructed to:

(A) determine an absolute rotational position of the component within a time as minimal as less than a single revolution of the engine after sufficient power to energize the control system has been generated by detecting rotation of the first and second angularly-spaced indexing markers past the detector and identifying the second detected indexing marker;

(B) enable an engine firing sequence upon determining the absolute rotational position of the component to start the engine upon a single actuation of the rope-start mechanism; then

(C) determine a rotational direction of the component based on continued monitoring of the rotation of the component; and then

(D) disable the engine firing sequence if is determined in step (C) that the component is running in a reverse direction.

55. (New) The snowmobile of claim 54 wherein the rope-start mechanism includes a spool and a rope around the spool, and the rope-start mechanism is actuated by pulling the rope to unwind it from the spool.

56. (New) The snowmobile of claim 54 wherein the rotational component is a flywheel of the engine.

57. (New) The snowmobile of claim 54 wherein the rotational component further includes a third indexing marker.

58. (New) The snowmobile of claim 57 wherein the second indexing marker is located at a first angular spacing from the first indexing marker and a second angular spacing from the third indexing marker, wherein the first angular spacing is not equal to the second angular spacing.

59. (New) The snowmobile of claim 58 wherein the rotational component further includes equally spaced indicator marker.

60. (New) The snowmobile of claim 54 further comprising an electronic fuel injection system.

61. (New) The snowmobile of claim 54 wherein the engine is a battery-less engine.